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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,491	07/25/2003	Roger D. Peckham	H0004168	4209

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EXAMINER

NGUYEN, THU V

ART UNIT	PAPER NUMBER
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3661

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/627,491

Applicant(s)

PECKHAM ET AL.

Examiner

Thu Nguyen

Art Unit

3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,6-8,11,12 and 16-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6-8,11,12,16-21 and 24 is/are rejected.
- 7) ☒ Claim(s) 22,23,25 and 26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

The amendment filed on August 31, 2004 has been entered. By this amendment, claims 3-5, 9-10, 13-15 have been canceled, claims 20-26 have been added and claims 1-2, 6-8, 11-12, 16-26 are now pending in the application.

Drawings

1. In fig.3, after box 26, the arrow indicated "yes" should be corrected to "no" and the arrow indicated "no" should be corrected to "yes" so that the drawing corresponds to the specification disclosed in paragraph 0032-0033.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 17, 21, 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. In claim 17, line 2, the claimed “the new candidate active waypoint is a virtual waypoint” seems conflict with the content in claim 20 since, according to claim 20, the new candidate waypoint (either the first or second waypoint) should be the waypoints of the preplanned lateral route (claim 20, line 4, and claim 20, line 8). The virtual waypoint seems to be a waypoint newly created and it is not the waypoints of the preplanned lateral route.
- b. In claim 21, line 2, the claimed “select new waypoint from the waypoints or the preplanned route” is ambiguous and does not seems disclose the details disclosed in paragraph 32-34. paragraph 32-34 appear to select waypoint A or B when the aircraft is approaching the waypoint (not as the aircraft passed the waypoints as claimed) and is deviating from the path. Frutehrmore, the paragraphs 32-34 disclose selecting point A or B which are the waypoints of the preplanned route, these waypoints are not “new” waypoints.
- c. Claim 24 is similarly rejected as discussed in claim 21 above.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 6-8, 11-12, 16-18, 20-21, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onken et al (US 6,163,744).

As per claim 1, 20, Onken teaches an aircraft flight management system that stores pre-planned lateral route of flight with a plurality of successive waypoints (col.3, lines 44-55). A method providing a return to path maneuver in the event that the aircraft deviates from the pre-planned route comprises: calculating a return path route to overfly the new waypoint (col.4, lines 33-56; col.5, lines 39-48; col.12, lines 1-26; fig.11) if the aircraft is outside a preset boundary of the preplanned route (col.10, lines 38-39, lines 42-44). Onken does not explicitly teach choosing either a first waypoint or a second waypoint that is following after the first waypoint as the candidate active waypoint. However, the claimed limitation stated in lines 6-12 actually means selecting the next waypoint in the preplanned route the aircraft would overfly if the aircraft had not been outside the preplanned route. Since Onken teaches determining the return path overflying the following waypoint P3 (fig.11) (col.12, lines 16-25), and since the waypoint P3 (fig.11) would have been the next waypoint the aircraft would have overflown if the aircraft had not been deviated from the planned route Onken obviously encompasses teaching calculating the

return to path to the next waypoint. Onken does not explicitly teach that the return to path route will overfly the candidate active waypoint P3, however, Onken teaches selecting the return path P1, P2, P4 or P1, P3, P4, etc (fig.11) when the path has the better association with the standard route and the minimum diversion to dealt with (col.12, lines 3-31), when the return route P1, P3, P4 has better association with the standard route, and minimum diversion, the return to path route would have been the one having the candidate active waypoint P3 which the aircraft would have been overflown if deviation had not been occurred. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to eliminate the process of selecting return path route with better association with the standard route of Onken and to automatically select the next waypoint as the point on the return path the aircraft will overfly in order to save system resources and processing time when such the association is not necessary.

As per claim 6, Onken teaches a down-path waypoint P3 (fig.11), further, Onken teaches a low recaptured bank angle of 3NM (col.9, lines 22-49).

As per claim 7-8, Onken teaches providing a virtual waypoint P1 (fig.11) that provides an intercept course to a successive waypoint P3 (if the path P3 is the optimal association with standard route) (col.12, lines 2-3, lines 16-31). Furthermore, point P1 (fig.11) is obviously the waypoint that provide an intercept course to the new candidate active waypoint P3 when the path overfly P3 produces optimal association with standard route.

As per claim 11-12, Onken teaches modifying the pre-planned route to include new candidate waypoint (fig.5, 10, 11; col.12, lines 31-32). Further, temporarily storing data until the data is accepted so that the accepted data can be retrieved for use would have been well known. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include a well known memory for temporarily storing all the possible waypoints that construct all possible routes in col.12, lines 1-31 of Onken in order to allow the user to select a route that he prefers to follow.

As per claim 16-18, refer to claims 6-8 above.

As per claim 21, 24, since Onken teaches using the preplanned path when the aircraft is within a threshold value (col.10, lines 35-44), Onken obviously disclose selecting the waypoints of the preplanned route when the aircraft is within a boundary of the threshold.

6. Claims 2, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onken et al (US 6,163,744) in view of Hirote et al (US 5,568,390).

As per claim 2, 19, Hirote suggests allowing the user to selectably accepting a calculated path route (col.13, lines 17-22). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to allow the user to select the calculated return path of Onken in order to provide the user the capability of selecting the path he mostly prefer to follow.

Allowable Subject Matter

7. Claims 22-23, 25-26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

Prior art of record does not disclose a method and an aircraft flight management system disclosed in claim 1 or 20 in which an orientation path is constructed when a return path can be built from the aircraft position to a leg associated with the new candidate active waypoint at an interception of forty five degrees while staying with a capture region is possible. Prior arts of record also does not disclose generating a virtual waypoint associating with the new candidate active waypoint, the virtual waypoint provides a tracking point that lies in the path of an aircraft on a forty five degree intercept path of the new candidate active waypoint.

Response to Arguments

9. Drawings: the originally filed figured 3 with the branches after box 26 indicated “Yes” and “No” is at the position stated in the proposed drawing correction (to say in other word, there is not any correction in the proposed drawing). Enclosed herein the original drawing fig.3, with the examiner’s suggestion of correction.

10. Applicant's arguments filed September 27, 2004 have been fully considered but they are not persuasive.

In response to applicant's argument on page 8, first two paragraphs, refer to discussion in 35 USC 103 on claim 1 above. In fig. 11, and in col.12, lines 1-31, Onken does teach selecting waypoint to return to the original flight path. The selection of point P3 (if the return path through point P3 is of close association with the standard route) taught by Onken obviously encompasses selecting the following waypoint in the preplanned path.

In response to applicant's argument on page 8, third paragraph, allowing the operator to accept or reject a selected path route would have been well known. This feature is taught by Hirota. The teaching of Hirota is cited herein does not mean a new ground of rejection has been established, this reference serves to support the previous examiner's position that the feature would have been well known.

In response to applicant's argument on page 6, last paragraph, Onken teaches the down-path waypoint P3 (fig.11) of the previously planned waypoints, furthermore, in col.9, lines 3-5, Onken teaches calculating intermediate segments to be inserted in the final approaches, Onken obviously includes calculating recapture waypoints constituting the intermediate segments. Claim 6 does not highlight the difference between the final approach having intermediate segments represented by waypoints defining the segments, and the recapture of the waypoint of the original pathway which is joined with the intermediate segments of Onken vs. the recapturing waypoint of the original waypoint set forth in the claim. Onken further teaches the low recapture bank angle of 3NM (col.9, lines 22-49).

In response to applicant's argument on claims 7-8, refer to discussion in claim 7-8 in section 35 USC 103 above.

Concerning newly added claims 20-21, 24, refer to discussion in section 35 USC 103 above.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any response to this final action should be mailed to:

Box AF

Commissioner for Patents

P.O. Box 1450

Alexandria VA 22313-1450

or faxed to:

(703) 872-9306 (for formal communications; please mark "EXPEDITED
PROCEDURE")

Art Unit: 3661

Or:

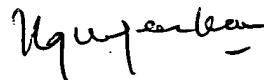
(703) 872-9306 (for informal or draft communications, please label
"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park V, 2451 Crystal
Drive, Arlington, VA., Seventh Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Thu Nguyen whose telephone number is (703) 306-9130. The
examiner can normally be reached on Monday-Thursday from 8:00 am to 6:00 pm ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Thomas Black, can be reached on (703) 305-8233. The fax phone number for this
Group is (703) 305-7687.

Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the Group receptionist whose telephone number is (703) 308-1113.



THU V. NGUYEN
PRIMARY EXAMINER
November 23, 2004

3/10

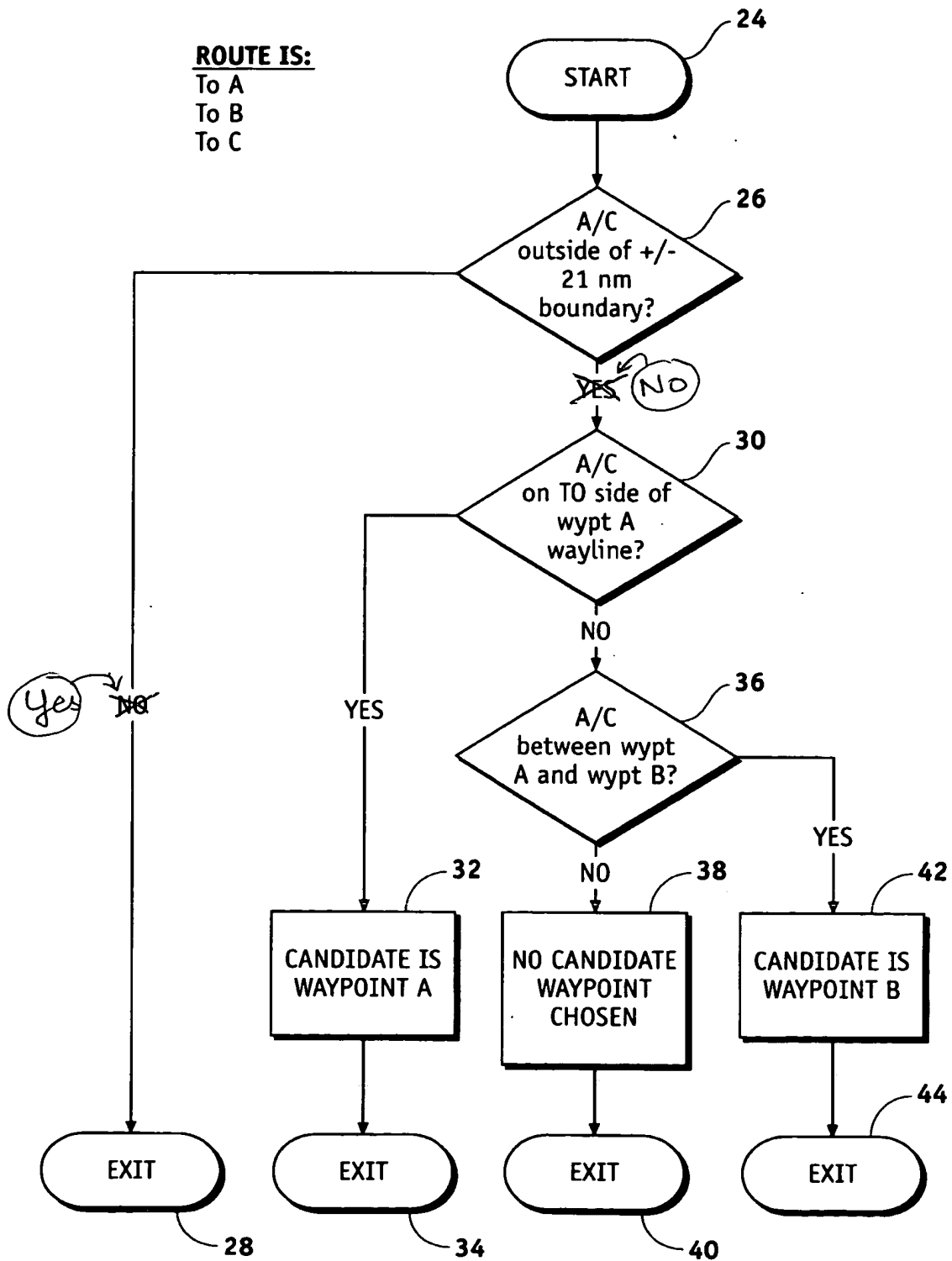


FIG. 3